



Rec'd PCT/PTO 26 APR 2005  
PCT/GB 2003 / 0 0 4 5 8 0  
10/332824

INVESTOR IN PEOPLE

The Patent Office  
Concept House

Cardiff Road

Newport NP23 5BU  
DEC 11 DEC 2003

South Wales

NP10 8000

PCT

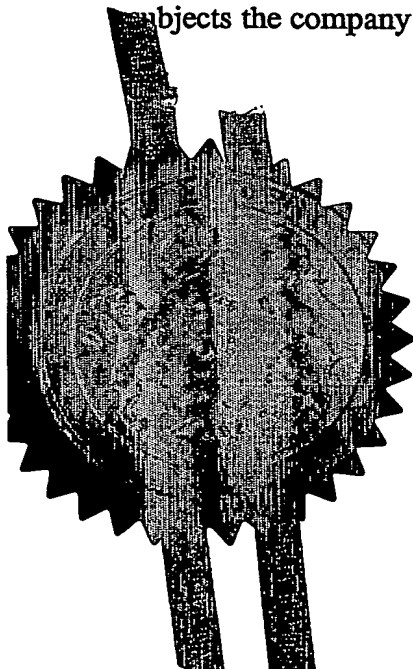
**PRIORITY DOCUMENT**  
SUBMITTED OR TRANSMITTED IN  
COMPLIANCE WITH  
RULE 17.1(a) OR (b)

I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

In accordance with the rules, the words "public limited company" may be replaced by p.l.c., plc, P.L.C. or PLC.

Re-registration under the Companies Act does not constitute a new legal entity but merely subjects the company to certain additional company law rules.



Signed

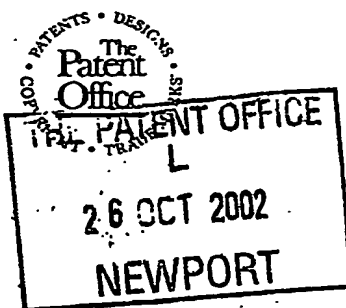
Andrew Gervay

Dated

1 December 2003

Patents Form 1/77

Patents Act 1977  
(Rule 16)



**Request for grant of a patent**

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)

The Patent Office

Cardiff Road  
Newport  
South Wales  
NP10 8QQ

1. Your reference som.2558.uk.kv.d

2. Patent application number 0224992.8  
(The Patent Office will fill in this part) 26 OCT 2002

3. Full name, address and postcode of the or of each applicant (underline all surnames) Marie Somerville  
69 Alexander Avenue  
Eaglesham  
GLASGOW  
G76 ODS  
  
Patents ADP number (if you know it)

If the applicant is a corporate body, give the country/state of its incorporation

4. Title of the invention Insect repellent

5. Name of your agent (if you have one) Kennedys Patent Agency Limited  
  
"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode) Floor 5, Queens House  
29 St Vincent Place  
GLASGOW  
G1 2DT

Patents ADP number (if you know it)

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number	Country	Priority application number (if you know it)	Date of filing (day / month / year)
--	---------	---	--

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application	Number of earlier application	Date of filing (day / month / year)
---	-------------------------------	--

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer 'Yes' if:

a) any applicant named in part 3 is not an inventor, or

b) there is an inventor who is not named as an applicant, or

c) any named applicant is a corporate body.

See note (d)) No

**Patents Form 1/77**

9. Enter the number of sheets for any of the following items you are filing with this form. Do not count copies of the same document

Continuation sheets of this form

Description 9

Claim(s)

Abstract

Drawing(s) -

10. If you are also filing any of the following, state how many against each item.

Priority documents

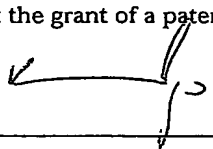
Translations of priority documents

Statement of inventorship and right to grant of a patent (Patents Form 7/77)

Request for preliminary examination and search (Patents Form 9/77)

Request for substantive examination (Patents Form 10/77)

Any other documents (please specify)

11. I/We request the grant of a patent on the basis of this application.
- |           |  |                 |
|-----------|--|-----------------|
| Signature |  | Date            |
| KENNEDYS  |  | 25 October 2002 |
12. Name and daytime telephone number of person to contact in the United Kingdom
- |              |               |
|--------------|---------------|
| Karen Veitch | 0141 226 6826 |
|--------------|---------------|

**Warning**

*After an application for a patent has been filed, the Comptroller of the Patent Office will consider whether publication or communication of the invention should be prohibited or restricted under Section 22 of the Patents Act 1977. You will be informed if it is necessary to prohibit or restrict your invention in this way. Furthermore, if you live in the United Kingdom, Section 23 of the Patents Act 1977 stops you from applying for a patent abroad without first getting written permission from the Patent Office unless an application has been filed at least 6 weeks beforehand in the United Kingdom for a patent for the same invention and either no direction prohibiting publication or communication has been given, or any such direction has been revoked.*

**Notes**

- If you need help to fill in this form or you have any questions, please contact the Patent Office on 08459 500505.
- Write your answers in capital letters using black ink or you may type them.
- If there is not enough space for all the relevant details on any part of this form, please continue on a separate sheet of paper and write "see continuation sheet" in the relevant part(s). Any continuation sheet should be attached to this form.
- If you have answered 'Yes' Patents Form 7/77 will need to be filed.
- Once you have filled in the form you must remember to sign and date it.
- For details of the fee and ways to pay please contact the Patent Office.

1 Insect Repellent

2  
3 The present invention relates to an insect repellent.  
4 More particularly the present invention relates to a  
5 composition, which can be applied to the skin in order to  
6 repel insects including, but not limited to mosquitoes  
7 and midges.

8  
9 In a number of European countries including the UK, and  
10 particularly Scotland, the midge and horsefly are serious  
11 irritants, to tourists, gardeners and sports enthusiasts,  
12 such as ramblers, hill-walkers, climbers, etc. It is  
13 estimated that around 14,000 species of midge exist, some  
14 of which carry viruses which are known to be dangerous to  
15 animals. Whilst in general, midge bites are not  
16 particularly dangerous and rarely result in disease in  
17 humans, the bites can be unpleasant and cause pruritis  
18 (itching), urticaria (skin eruptions) and localised  
19 inflammation. Unfortunately, it is thought that the  
20 prevalence of these pests may increase as worldwide  
21 climate changes occur.

22

1 The common midge and fly are irritating but generally  
2 harmless pests. However in many countries serious and  
3 potentially fatal diseases are spread by insects, such as  
4 mosquitoes. For example, the mosquito-borne illness,  
5 malaria, is one of the main killer diseases of the world,  
6 and causes an estimated 1 to 2 million deaths per year.  
7 In some parts of Africa it is estimated that 10% of the  
8 total mortality of infants under the age of 5 is due  
9 directly to the disease. Although historically this  
10 serious illness was localised in tropical areas such as  
11 Central and South America, the Middle East, the Indian  
12 sub-continent and Asia, the prevalence of malaria is  
13 rising due to temporary migration of the population  
14 between these countries, primarily due to the increase in  
15 popularity of tropical destinations for holidays and  
16 vacations. This is exemplified in the UK, where the  
17 number of reported cases of malaria has increased  
18 dramatically in recent decades due to foreign travel.  
19 Although malaria can be cured with prescription drugs,  
20 many mosquito species have developed resistance to common  
21 anti-malarial drugs. Therefore, as with many insect  
22 borne illnesses, prophylaxis is seen as preferable to  
23 cure. This is generally achieved through a combination  
24 of vaccination and also by the prevention of bites in the  
25 first instance.

26  
27 Other diseases spread by insects, include the viral  
28 illnesses Yellow Fever, Dengue Fever, Encephalitis and  
29 Filariasis which are all mosquito-borne. For the  
30 majority of these illnesses there are no preventative  
31 vaccines, and often no specific treatment. Thus the  
32 essence of prevention is to avoid being bitten in the  
33 first place. For example at present there is no

1 effective drug treatment for Yellow Fever or  
2 Encephalitis, and therefore prophylaxis is essential.  
3 Yet further, there is no current effective vaccination  
4 for Dengue Fever, and therefore it is vitally important  
5 that the initial insect bite is avoided.

6  
7 Other insect-borne diseases include leishmaniasis which  
8 is transmitted by sandflies; sleeping sickness  
9 transmitted by the tsetse fly; lyme disease and typhus  
10 fever which are transmitted by ticks.

11  
12 The demand for suitable insect repellents is therefore at  
13 an all-time high. There are many well known insect  
14 repellents on the market. Historically, most include the  
15 chemical DEET (diethyl toluamide). Whilst this chemical  
16 has been proven to be highly effective in repelling  
17 insects, it is highly toxic and can be absorbed through  
18 the skin. Yet further, DEET can act as a skin irritant  
19 and has a disagreeable odour. In addition, care must be  
20 taken to avoid furnishings, plastic, varnished and  
21 painted surfaces, when using repellents containing this  
22 chemical. Accordingly, in recent years there has been a  
23 move towards the search for natural, non-toxic yeast  
24 effective insect repellents, which do not cause  
25 irritation or toxicity to the user.

26  
27 It is an object of the present invention to provide a  
28 natural insect repellent, which is non-toxic to the user.

29  
30 Yet further, it is an object of the present invention to  
31 provide a natural insect repellent, which is non-irritant  
32 and has a pleasant smell.

1 It is a further aim of the present invention to provide  
2 an insect repellent, which is effective against insects  
3 such as fleas, ticks, gnats and, in particular, midges  
4 and mosquitoes.

5  
6 According to a first aspect of the present invention,  
7 there is provided a composition, which is effective in  
8 repelling insects, comprising a mixture of essential oils  
9 in a carrier oil.

10  
11 Preferably the essential oils are lime oil, myrtle,  
12 citronella oil, eucalyptus oil and neem oil.

13  
14 Most preferably the myrtle is bog myrtle.

15  
16 In a preferred embodiment, the carrier oil is grape seed  
17 oil. However, other carrier oils may be used, including  
18 almond oil, avocado oil, vegetable oil, wheat flour oil  
19 or sun germ oil or a mixture thereof.

20  
21 Preferably the carrier oil constitutes 50% of the  
22 composition.

23  
24 Preferably the essential oils constitute 50% of the  
25 composition.

26  
27 Preferably the lime oil is present in a concentration of  
28 between 8 and 12 drops per  $\frac{1}{2}$  ml of the composition.

29  
30 Most preferably the lime oil is present in a  
31 concentration of 10 drops per  $\frac{1}{2}$  ml of the composition.

32

1 Preferably the myrtle oil is present in a concentration  
2 of between 28 and 32 drops per 1½ ml of the composition.

3  
4 Most preferably the myrtle oil is present in a  
5 concentration of 30 drops per 1½ ml of the composition.

6  
7 Preferably the citronella oil is present in a  
8 concentration of between 190 and 210 drops per 10ml of  
9 the composition.

10  
11 Most preferably the citronella oil is present in a  
12 concentration of 200 drops per 10 ml of the composition.

13  
14 Preferably the eucalyptus oil is present in a  
15 concentration of 3 to 7 drops per ¼ ml of the composition.

16  
17 Most preferably the eucalyptus oil is present in a  
18 concentration of 5 drops per ¼ ml of the composition.

19  
20 Preferably the neem oil is present in a concentration of  
21 between 740 and 760 drops per 37ml of the composition.

22  
23 Most preferably the neem oil is present in a  
24 concentration of 750 drops per 37 ml of the composition.

25  
26 Preferably the carrier oil is present in a concentration  
27 of 23 ml.

28  
29 Optionally the composition is provided as a spray.

30  
31 The composition is intended for topical use.

32



1 The composition repels insects including, but not limited  
2 to midges, mosquitoes, gnats, ticks, flies and fleas.

3

4 Preferably the composition has a pleasant odour.

5

6 According to a second aspect of the present invention,  
7 there is provided a composition, which is effective in  
8 repelling insects, comprising a mixture of lime oil,  
9 myrtle, citronella oil, eucalyptus oil and neem oil.

10

11 Most preferably the myrtle is bog myrtle.

12

13 Preferably the essential oils constitute 50% of the  
14 composition.

15

16 Preferably the lime oil is present in a concentration of  
17 between 8 and 12 drops per  $\frac{1}{2}$  ml of the composition.

18

19 Most preferably the lime oil is present in a  
20 concentration of 10 drops per  $\frac{1}{2}$  ml of the composition.

21

22 Preferably the myrtle oil is present in a concentration  
23 of between 28 and 32 drops per 1  $\frac{1}{2}$  ml of the composition.

24

25 Most preferably the myrtle oil is present in a  
26 concentration of 30 drops per 1  $\frac{1}{2}$  ml of the composition.

27

28 Preferably the citronella oil is present in a  
29 concentration of between 190 and 210 drops per 10ml of  
30 the composition.

31

32 Most preferably the citronella oil is present in a  
33 concentration of 200 drops per 10 ml of the composition.

1  
2 Preferably the eucalyptus oil is present in a  
3 concentration of 3 to 7 drops per ¼ml of the composition.  
4

5 Most preferably the eucalyptus oil is present in a  
6 concentration of 5 drops per ¼ ml of the composition.  
7

8 The neem oil comprises the remainder of the composition  
9 and acts as a carrier oil.  
10

11 Optionally the composition is provided as a spray.  
12

13 The composition is intended for topical use.  
14

15 The composition repels insects including, but not limited  
16 to midges, mosquitoes, gnats, ticks, flies and fleas.  
17

18 Preferably the composition has a pleasant odour.  
19

20 According to the third aspect of the present invention,  
21 there is provided a composition, which is effective in  
22 repelling insects, comprising a mixture of essential oils  
23 and a base cream.  
24

25 Preferably the essential oils are lime oil, myrtle,  
26 citronella oil, eucalyptus oil and neem oil.  
27

28 Most preferably the myrtle is bog myrtle.  
29

30 Optionally the composition comprises a carrier oil which  
31 may be grape seed oil, however other carrier oils may be  
32 used, including almond oil, avocado oil, vegetable oil,  
33 wheat flour oil or sun germ oil or a mixture thereof.

1  
2 Typically the base cream comprises a mixture of aqua,  
3 prunus dulcis, glycerine (vegetable), cetearyl alcohol,  
4 stearic acid, triethanolamine, ceteareth 20, methyl  
5 paraffin, imidazolidinyl urea and propyl paraffin.

6  
7 The composition is intended for topical use.

8  
9 Preferably the composition has a pleasant odour.

10  
11 Advantageously, the described composition has an  
12 agreeable smell, and is completely natural and non-toxic  
13 to the user.

14  
15 In the present invention, it has been discovered that the  
16 described composition has surprisingly superior and  
17 super-additive effectiveness over conventional insect  
18 repellents in repelling midges and mosquitoes.

19 Specifically, it has been discovered that by preparing a  
20 composition comprising 10 drops per  $\frac{1}{2}$  ml of lime oil, 30  
21 drops per  $1\frac{1}{2}$  ml of bog myrtle, 200 drops per 10 ml of  
22 citronella oil, 5 drops per  $\frac{1}{4}$  ml of eucalyptus oil and  
23 740 drops per 37 ml of neem oil, preferably with a  
24 carrier oil results in a superior non-toxic insect  
25 repellent.

26  
27 In the preferred embodiment, grape seed oil is used as a  
28 carrier, however it will be appreciated that any suitable  
29 natural oil, such as almond oil, avocado oil, vegetable  
30 oil, wheat flour oil or sun germ oil, or indeed a mixture  
31 thereof could be used.

32

1 It is also appreciated that any form of eucalyptus, such  
2 as lavender eucalyptus or lemon eucalyptus could be used  
3 within the composition. Similarly, whilst the use of bog  
4 myrtle is preferred, any alternative and corresponding  
5 type of myrtle, such as white myrtle, could be used.

6  
7 In an alternative embodiment, the carrier oil could be  
8 removed altogether, and the neem oil could be substituted  
9 as the carrier base.

10  
11 The effectiveness of the composition described in the  
12 present Application is tested using female mosquitoes  
13 which are bred and incubated in the normal manner. A  
14 tester applies the composition to both hands, and these  
15 are inserted into a closed box which contains a set  
16 number of mosquitoes, typically 20, for a set period of  
17 time. Effectiveness is calculated by two means, firstly  
18 by visual observation of the number of mosquitoes which  
19 land on the tester's hands, and secondly by counting of  
20 the number of visible bites which appear at the end of  
21 the test.

22  
23 Modifications and improvements may be made to the  
24 foregoing without departing from the scope of the  
25 invention.